

ABSTRACT

A method includes a component preparation step 10 of exposing local areas (damaged areas of an existing coating) of a base material of a metal component 1 to be coated, and roughening a surface of the base material to a desired surface roughness, a slurry preparation step 12 of preparing a coating slurry that contains a halide activator, a water soluble organic binder, and powder of an aluminum-containing intermetallic compound 3, an application and drying step 14 of applying the coating slurry to the damaged areas of the metal component, and then drying the areas, a packing step 16 of packing the metal component in a heat-resistant container filled with alumina powder, a diffusion treatment step 18 of retaining the heat-resistant container at high temperature in an inert atmosphere or a reducing atmosphere to diffuse aluminum onto the surface of the metal component, and a cleaning step 20 of taking out the metal component from the heat resistant container, and removing a slag from the surface of the metal component.